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E72-10257

CR-128478

NTIS: HC#3.00

TYPE I PROGRESS REPORT - NOVEMBER 30, 1972

- A) Title - DYNAMICS OF PLAYA LAKES IN THE TEXAS HIGH PLAINS (342-C)
- B) P.I. Identification Number - UN 168
- C) Problems - Seven passes by ERTS-1 have been made over the test site area, but only two (July 29, Oct. 9) have been clear enough for use. The November 14 pass has not been received as yet.

Work at Stanford Research Institute on electronic enhancement of available imagery indicates that ERTS-1 resolution is adequate for recognition of the study sites but will be inadequate for workable measurements. To prelude resolution problems, an additional ERTS-1 study site (#4--Double Lakes) has been selected, however, one of the original small playas will continue to be monitored and examined per chance enhancement techniques or resolution improves.

- D) Accomplishments - Ground-truth studies at the three original ERTS-1 study sites was completed. Cores (3-5/8"), with 100% recovery, were taken in the deepest part of each basin. Sedimentary study of the cores will be undertaken by Mr. Joe Goebel who will use the sites for his Ph.D. dissertation.

Instrumentation from ERTS-1 site 1 (Heard Playa) is being removed and installed at the alternate ERTS-1 site 4

N73-12357

(E72-10257) DYNAMICS OF PLAYA LAKES IN THE
TEXAS HIGH PLAINS Progress Report C.C.
Reeves, Jr. (Texas Technological Univ.)
30 Nov. 1972 5 p

Unclas
G3/13 00257

CSSL 08H

(Double Lakes), but instrumentation will continue to be monitored at the T-Bar site #3.

E) Significant results - Regional viewing of ERTS-1 imagery around the test sites shows that storm paths can be accurately traced (Band 6, ERTS-E-1006-16522) and a count made of the number of intermittent lake basins filled by the storm. Therefore, during wet years ERTS-type imagery can be used to conduct a reliable count of the tens of thousands of natural lake basins on the southern High Plains which contain water. This type of regional overview of water-filled basins in the normally arid southern High Plains is illustrated by Bands 6 and 7, ERTS E-1078-16524 (October 9, 1972).

F) Published articles - NA

G) Recommendations - The selection and instrumentation of a large alternate ERTS-1 study site (#4), yet the continued monitoring of an original small playa ERTS-1 study site (#3), insures that tangible quantitative results will be forthcoming. Secondly, the breadth of the project is increased by now having a representative of the large type playas which exist not only in the area, but in all foreign desert areas.

H) Changes - Standing order products - NA

- I) Image descriptor forms - See following page.
- J) Data request forms - NA
- K) Other information - An additional \$5700 worth of instrumentation (16 additional colors for density slicer, special Angenieux 10 x 15 zoom lens for density slicer, density control unit to make quantitative density measurements of gray scale of transparencies) has been ordered for the ERTS-1 project, funding provided by the State of Texas.

Mr. Joe Goebel, who conducted the soil surveys at the original test sites, was added to the project for one month (January 1 - February 1, 1973) to complete the soil survey over ERTS-1 test site 4 (Double Lakes).

Mr. John Buchanan will be added to the project for the period January 1 - May 31, 1973, to complete ground-truth studies of ERTS-1 test site 4 and to help with the soil survey.

Work planned for the next reporting period is the following:

- 1) installation of weather monitoring instruments at ERTS-1 test site 4.
- 2) splitting and bottling of cores from sites 1, 2, 3.
- 3) soil survey of ERTS-1 test site 4.

No additional funds are needed to add ERTS-1 study site 4 (Double Lakes) because of availability of W.D. Miller's (deceased) salary funds.

(See Instructions on Back)

ORGANIZATION Texas Tech University

ID: [REDACTED]

PRODUCT ID (INCLUDE BAND AND PRODUCT)	FREQUENTLY USED DESCRIPTORS*			DESCRIPTORS
	Playa Lake	Hydro- logy		
1006165226A	✓	✓		Storm track
1007165755A	✓	✓		Dunes, cultivation
1078165247A	✓	✓		Lineaments

*FOR DESCRIPTORS WHICH WILL OCCUR FREQUENTLY, WRITE THE DESCRIPTOR TERMS IN THESE COLUMN HEADING SPACES NOW AND USE A CHECK (✓) MARK IN THE APPROPRIATE PRODUCT ID LINES. (FOR OTHER DESCRIPTORS, WRITE THE TERM UNDER THE DESCRIPTORS COLUMN).

**MAIL TO ERTS USER SERVICES
CODE 563
BLDG 23 ROOM E413
NASA GSFC
GREENBELT, MD. 20771
301-982-5406**

NTIS SUMMARY

Discipline 4 - Water Resources

Subdiscipline - Limnology

Electronic enhancement of three small playa lake study sites selected for the ERTS-1 experiment indicates that resolution, although adequate for recognition, may not be sufficient for detailed analysis. Therefore, a fourth study site, consisting of a dual playa lake complex over 5 miles long, is now undergoing ground-truth studies. However, two original study sites will be maintained and monitored.